FE PRO JAVA SP2022 SE 123456789

Object-Oriented Programming (FPT University)

PE_01

1) In order for objects in a List to be sorted, those objects must implement which interface and method? Comparable interface and its compareTo method.
2) What happens when you try to compile and run this application?

1. import java util. *;

2.

3. public class Apple {

4. public static void main(String a) {

5. Set<Apple> set = new TreeSet<Apple>();

6. set.add(new Apple());

7. set add(new Apple());

8. set.add(new Apple());

An exception is thrown at line 7 (Apple cannot be cast to java.lang.Comparable).

3) 11. public abstract class Shape {

12 int x;

13 int y;

14. public abstract void draw(){

15. public void setAnchor(int x, int y) {

16. this x = x;

17. this y = y;

18. }

19 }

and a class Circle that extends and fully implements the Shape class

Which is correct? Shape s = new Circle(), s.setAnchor(10,10), s.draw().

4) Suppose prim is an int and wrapped is an Integer. Which of the following are legal Java statements?

A wrapped = 9;

B prim = wrapped;

C. wrapped = prim;

D. prim = new Integer(9);

E. All the others

5) Which of the following signatures is valid for the main() method entry point of an application? public static void main(String[] args)
6) What will happen when you attempt to compile and run the following program (please note that the Object class does not have the foo() method):

```
class A{
void foo() {System.out print("A");}
}
class B{
void foo() {System. out print("B");}
}
class C extends A{
 void foo() {System.out.print("C");}
}
class Main {
 public static void main(String[] args) {
 Object t = new A();
  t = foo();
  t  = new B();
  t = foo();
  t = new C();
  t = foo();
   }
}
```

BCA

7) Which of the following statements is true?

A. A final object's data cannot be changed.

B. A final class can be subclassed.

C. A final method cannot be overloaded.

D. A final object cannot be reassigned a new address in memory.

8) int j;

```
for(int i = 0; I < 14; i++){
 if(I < 10) {
    j = 2 + I;
  }
 }
 System.out println("j: " + j "i: ”+ i);
}
```

What is WRONG with the above code? Integer “j” not initialized

9) To write objects to an object file. The right order of object creations is:

FileOutputStream - ObjectOutputStream

10) What will happen when you attempt to compile and run the following program:

```
class Box {
 int a,b;
 Box() {}
 Box(int x, int y) {a=x;b=y;}
}
class Reg extends Box {
 int c;
 Reg() {}
 Reg(int x, int y, int z) {
 this c = z;
 super(x.y);
}
void display() {
  System.out printin(a+b+c);}
}
class Main {
```

```
public static void main(String[] args) {
Reg t = new Reg(2,3,4);
t.display();
                }
        }
```

Compile-time error. hàm super() phải ở đầu trong 1 constructor

11) Consider the following code. Which line will not compile?

1. Object ob = new Object():

2. String[] stringarr = new String[50]:

3. Float floater = new Float(3.14f).

4. ob = stringarr;

5. ob = stringarr[5];

6. floater = ob;

7. ob = floater;

A. Line 6 Object là cha của mọi class. Tức là việc gắn ob cho stringarr,floater là hoàn toàn có thể được, nó đơn giản chỉ là
Obj ob = new String[50];
Obj ob = new Float(3.14f);
Còn việc gắn floater = ob là không thể.

12) You have been given a design document for a veterinary registration system for implementation in Java. It states:

"A pet has an owner, a registration date, and a vaccination-due date. A cat is a pet that has a flag indicating whether it has been neutered, and a textual description of its markings."

Given that the Pet class has already been defined, which of the following fields would be appropriate for inclusion in the Cat class as members?

(Select the most appropriate two declarations).

boolean neutered;

String markings;

13) 10. public class ClassA (

11. pubic void count(int i){

12. count(++i);

13. }

14.}

And

20 ClassA a = new ClassA().

21. a.count(3);

Which exception or error should be thrown by the virtual machine?

StackOverflowError Đệ quy phải có điểm dừng. Nếu không sẽ gây ra lỗi StackOverFlow.

14) Which of the following methods of the java io.File can be used to create a new file?

There is no such method. Just do File f= new File (filename te), then the new file, named filename tet, will be created

15) Which of the following modifiers does not allow a variable to be modified its value once it was initialized? Final

(Choose 1 answer) Select the most correct statement

A. A protected method may only be accessed by classes or interfaces of the same package.

B. A protected method may only be accessed by classes of the same package or by subclasses of the class in which it is declared.

C. A protected method may only be accessed by the class in which it is declared or by the subclasses of that class.

D. A protected method may only be accessed by classes or interfaces of the same package or by subclasses of the class in which it is declared.

16) What is the output when the following program is run?

public class Test{

public static void main(String] args){

String a = "XYZ";

String b = new String("XYZ");

if(a==b)

System.out.print(" a == b, ");

else

System.out.print(" a # b, ");

String c = b.intern():

Định nghĩa mới. String Pool trong Heap. Nếu bạn khai báo kiểu
String thaygiaoC = new String("cuong"); thì thaygiaoC sẽ nằm ngoài vùng String Pool. Còn nếu bạn khai báo kiểu
String thaygiaoC = "cuong" thì thaygiaoC sẽ nằm trong vùng String Pool. Từ đó khi đem so sánh sẽ không giống nhau. Còn nếu bạn dùng hàm intern thì sẽ tạo ra 1 bản sao của string mà nằm trong String Pool. Do đó a khác b do a trong b ngoài. c là "XYZ" và c nằm trong string pool nên c = a, c khác b.

```
if(a==c)
 System.out.printin(" a == c");
  else
  System.out.printin(" a # c");}
```

a #b, a == c

17) Which statement is true about the following method:

```
int selfXor(int i) {
return i ^ i;}
```

Toán tử (XOR = ^):
A XOR B = A ^ B
return 1 nếu A khác B, return 0 nếu A = B. Ở đây i^i có i=i nên return 0.

It always returns 0.

18) An overridden method can be in the same class. FALSE (1 class ko thể có 2 method)
19) All objects belonging to the same class have the same characteristics and possible actions. FALSE
20) (Choose 1 answer)
Select correct statement:
A. String objects are constants. StringButter objects are not
B. StringBuffer objects are constants. String objects are not
C. Both String and StringBuffer objects are constants.
D. Both String and StringBuffer objects are not constants.

String và StringBufffer
String có thể sửa, Buffer thì k
String chậm, Buffer nhanh
String ghi đè equal của Obj, Buffer thì k

21) What will be the result when you attempt to compile and run the following code

```
public class Conv{
  public static void main(String argv[]){
Conv c = new Conv();
String s = new String("ello");
c.amethod(s);
}
  public void amethod(String s){
char c='H';
c+=s;
System.out printin(c);
        }
}
```

Char được ép kiểu ngầm định thành int trong java.
c+=s -> c= c+s;
nhưng mà amethod (STRING s) có s là String (không phải char) nên không thể đem s + c được, nên complile time error(char = int, string khác char).

22) (Choose 1 answer)
The ability of a programming language to process objects differently depending on their type is Polymorphism

23) (Choose 1 answer)

An instance of the java.util.Scanner class can read data from the keyboard (1), a file (2), a string of characters (3). (1)is True, (2) is true, and (3) is True.

24) (Choose 1 answer)

What is the output of the following code:

```
1: String str = "Welcome";
2: str.concat(" to Java!");
3: System.out.println(str);
```

Prints "Welcome".

str.concat("tojava") đơn giản là trả về "Welcome to java" chứ không biến đổi "Welcome".
Nên vì vậy đáp án là Welcome

25) Select a correct statement about interfaces.

C. In its most common form, an interface is a group of related methods with empty bodies.

26) Select the most correct statement:

C. If a checked exception may be thrown within the body of a method, the method must either catch the exception or declare it in its throws clause.

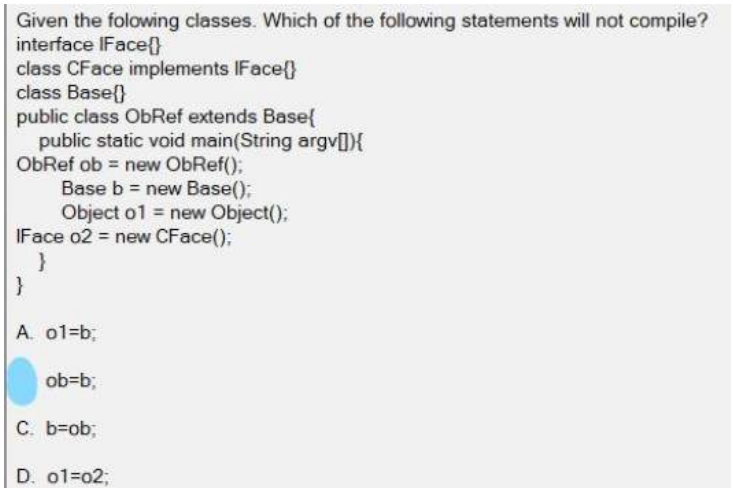
27) What will happen if you try to compile and run the following code:

```
public class MyClass{
static int i;
    public static void main(String args[]){
    System.out.println(i);}
    }
```

0

Note rằng khi khởi tạo biến tĩnh mà không khai báo thì mặc định gắn int giá trị 0. bolean là false, obj là null, String là NULL.

28)



Given the folowing classes. Which of the following statements will not compile?

```
interface IFace{}
class CFace implements IFace{}
class Base{}
public class ObRef extends Base{
   public static void main(String argv[]){
ObRef ob = new ObRef();
      Base b = new Base();
      Object o1 = new Object();
IFace o2 = new CFace();
   }
}
```

A. o1=b;

ob=b;

C. b=ob;

D. o1=o2;

29) Interfaces cannot__extend but they can__extend (classes, interfaces)

Interface k thể extend class(vì interface có thể coi như là "bố" của class), nhưng interface có thể extend interface (interface có quan hệ cha - con).

30) What does the following code do?

Integer i = null;

```
if (i != null & i.intValue() == 5)
  System.out.println("Value is 5");
```

D NullPointerException (i = null nên ko thể gọi hàm intValue, k sai ở & vì & là toán tử AND) Throws an exception.

31) A programmer needs to create a logging method that can accept an arbitrary number of arguments. For example, it may be called in these ways:
loglt("log message 1 ");
loglt("log message2", "log message3");
loglt("log message4", "log message5", "log message6");
Which declaration satisfies this requirement?
A. public void loglt(String.. msgs)

32)

What is the output when the following program is run?

```
class A {public int x;}
public class Main
 {static void fun(A t) {t.x += 2;}
   public static void main(String args[])
    {A t = new A();
     t.x = 99;
     System.out.print(t.x + "  ");
     t.x++;
     System.out.print(t.x + "  ");
     fun(t);
     System.out.println(t.x);
    }
 }
```

99, 100, 102

33)

(Choose 1 answer)

What will happen when you attempt to compile and run the following code

```
import java.io.*;
class Base{
   public void amethod()throws FileNotFoundException{}
}

public class ExcepDemo extends Base{
   public static void main(String argv[]){
ExcepDemo e = new ExcepDemo();
   }

   public void amethod(){}
   protected ExcepDemo(){
try{
   DataInputStream din = new DataInputStream(System.in);
   System.out.println("Pausing");
   din.readByte();
   System.out.println("Continuing");
   this.amethod();
}catch(IOException ioe) {}

   }
```

```
ExcepDemo e = new ExcepDemo();
   }

   public void amethod(){}
   protected ExcepDemo(){
try{
   DataInputStream din = new DataInputStream(System.in);
   System.out.println("Pausing");
   din.readByte();
   System.out.println("Continuing");
   this.amethod();
}catch(IOException ioe) {}

   }
}
```

A. Compile time error caused by protected constructor

B. Compile and run with output of "Pausing" and "Continuing" after a key is hit

Compile time error caused by amethod not declaring Exception

D. Runtime error caused by amethod not declaring Exception

34) (Choose 1 answer)

Will this following code compile?

```
try {
} catch (Exception e) {
}catch (ArithmeticException a) {
}
```

không chạy vì exception e đã bắt tất cả các lỗi bao gồm Arithmetic

B. This code will not compile

35)

(Choose 1 answer)

```
11. public class Person {
12.   int age;
13.   String name;
14.
15.   public Person() {
16.     this("Peter");
17.     System.out.print("first ");
18.   }
19.
20.   public Person(String name) {
21.     this(42, "Peter");
22.     System.out.print("second ");
23.   }
24.
25.   public Person(int age, String name) {
26.     this.age = age;
27.     this.name = name;
28.     System.out.print("third ");
29.   }
30.
31.   public static void main(String[] args) {
32.     Person b = new Person();
33.     System.out.print(b.name +" " + b.age);
34.   }
35. }
```

B. third second first Peter 42

36) (Choose 1 answer)

A class defines an entity, while an object is the actual entity. False

37) (Choose 1 answer)

What is the output when you try to compile and run the following program?

```
public class Main{
 void f(String t) {System.out.println("String");}
 void f(StringBuffer h) {System.out.printin("StringBuffer");}
 public static void main(String argv[]){
   f("ABC");
   System.out.println():
 }
}
```

No output, compile-time error.

38) (Choose 2 answers)

if(check4Biz(storeNum) != null) {}

Referring to the above, what data type could be returned by method check4Biz()? (Select two) String, Boolean

39) Which of the following is the correct syntax for suggesting that JVM performs garbage collection? c. System.gc();

40) (Choose 1 answer)

By default, the java.lang package is imported into every Java program. TRUE

41) (Choose 1 answer)

Consider the following class definition:

```
1. public class Test extends Base {
2. public Test(int j) {
3.}
4. public Test(int j, int k) {
```

5. super(j, k);
6.}
7.}
Which of the following is legal calls to construct instances of the Test class?
Test t = new Test(1);

42) A compound statement is:
A. A collection of one or more statements enclosed in braces

43) Which of the following most closely describes the process of overriding?
A method with the same name completely replaces the functionality of a method earlier in the hierarchy

44) Given the following class definition
public class Upton{
public static void main(String argv[]){
public void amethod(int i){}
//Here
}
Which of the following would be illegal to place after the comment //Here?
public int amethod(int i){}

PE_02

1. Given:
10. abstract public class Employee {
11. protected abstract double getSalesAmount():
12. public double getCommision() {
13. return getSalesAmount() * 0.15:
14. }
15.}
16. class Sales extends Employee {
17. // insert method here
18.}
Which two methods, inserted independently at line 17, correctly complete the Sales class? (Select two)
public double getSalesAmount() { return 1230.45; }
protected double getSalesAmount() { return 1230.45; }
2. How can you force garbage collection of an object? Call System.gc();
3. Given the following code, what is the expected outcom
public class Test{
public static void main(String | a) {
int b = [1,2,3,4,5,6,7,8,9,0];
System.out printin("a[2]=" + a[2]);}
}
The code does not compile.

4. A generic class can have only one type parameter. FALSE
5. What will the following code print out?

```
public class Oct{
public static void main(String argv[])
Octo = new Oct():
o.amethod();
}
public void amethod(){
int oi= 012;
System.out.println(oi):
}
```

có 0 đằng trước thì sẽ tự động chuyển sang hệ cơ số 8

10

6. You can prevent a class from being sub-classed by using the____keyword in the class's declaration. Final
7. (Choose 1 answer)

Class SomeException:

```
1. public class SomeException {
2. }
```

Class A:

```
1. public class A {
2.   public void doSomething() { }
3. }
```

Class B:

```
1. public class B extends A {
2.   public void doSomething() throws SomeException { }
3. }
```

B fall, A success.

8. (Choose 1 answer)

What will happen when you compile and run the following code?

```
public class Scope{
   private int i;
   public static void main(String argv[]){
Scope s = new Scope();
s.amethod();
   }//End of main
   public static void amethod(){
System.out.println(i);
   }//end of amethod
}//End of class
```

B. A compile time error complaining of the scope of the variable i

9. When creating your own class and you want to make it directly support sorting. which interface must it implement? Comparable
10. All of the numeric wrapper classes in the java.lang package are subclasses of the abstract class____. java.lang.Number
11. (Choose I answer)
    What happens when you attempt to compile and run these two files in the same director
    I/File P1.java
    package MyPackage:
    class P1{
    void afancymethod(){
      System.out.printin("What a fancy method"):
    }
    //File P2.java
    public class P2 extends P1{
     public static void main(String argv[]){
    P2 p2 = new P20:
    p2.afancymethod():
     }
    }
    P1 compiles cleanly but P2 has an error at compile time
12. Which of the following statements is true?
    A. A final class can be subclassed.
    B. A final method cannot be overloaded
    C. A final object cannot be reassigned a new address in memory
    D. A final object's data cannot be changed.
13. Which of the following are true? (select 2)
    A. Primitives are passed by value.
    B. Primitives are passed by reference
    C. References are passed by reference
    D. References are passed by value.
14. Given:
    11. public static void foo(String str) {
    12. try {
     13. float x = Float.parseFloat(str):
    14. } catch (NumberFormatException e) {
    15. x = 0;
    16. } finally {
    17. System.out printin(x):
    18. }
    19.}
    20. public static void main(String[] args) {
    21. foo("invalid"):
    22.}

What is the result?

B. Compilation fails at line 15 with message about variable x not found.

15. A(n)____is a characteristic that describes an object. Attribute
16. Suppose class X contains the following method:
    void doSomething(int a, float b) {-}
    Which of the following methods may appear in class Y, which extends X?
    D. public void doSomething(int a, float b) { - }
17. (choose 1 answer)
    Statement 1. A protected member of a class can be accessed from any class in the same package and from a subclass that is outside the package.
    Statement 2. A member of a class that is declared private can be accessed only within the class but nowhere outside the class.
    Choose the correct answer? Both statement 1 and statement 2 are TRUE.
18. Given the following statements:
    int [] a = {9, 41, 49, 13, 32 };
    int sum = 0;
    Which of the following are legal ways to calculate the sum of the elements of the array a? (select 2)
    B. for (int i = 0; i < a.length; i++) sum += a[i];
    C. for (int k: a) sum += k;
19. What is the output when you try to compile and run the following program?

```
public class Main{
public static void main(String argv[]){
String s = "Hi there";
int pos = s.indexOf(" ");
String r = s.substring(0, pos);
String s2 = new String(new char[] {'H', 'i'});
if(r.equals(s2))
    System.out.println("EQUAL");
else
    System.out.println("NOT EQUAL");
System.out.println();
}
}
```

indexOf: trả về vị trí của " ";
substring(0, pos): trả về chuỗi từ 0 -> " " ở đây là Hi

EQUAL

Which of the following is illegal argument types for a switch statement? Long

20. Consider the following line of code:
    Int[] x = new int[25]:
    After execution, which statement is true?
    A. x[25] is 0
    B. x[0] is null
    C. x[24] is undefined
    D. x[24] is 0

21. Select a correct statement about interfaces. In its most common form, an interface is a group of related methods with empty bodies.

22. public static void main(String[] args) {
    Vector<Integer> t = new Vector<Integer>();

    t.add(12);
    t.add(2);
    t.add(6);
    t.add(2.4);
    Iterator<Integer> i = t.iterator();
    int sum = 0;
    while (i.hasNext()) sum += i.next();
    System.out.println(sum);}
    }
    Lỗi vì t.add(2.4); type double
23. (Choose 1 answer) answer
    Which of the following is an example of a Java-boolean expression?
    A. cause == b Yes
24. Select an operation which may cause an unchecked exception
    Accessing a remote resource
25. When multiple methods exist within the same class with different method signatures, this is known as what?
    A. There is nothing one can say
    B. Message passing
    C. Overriding methods
    D. A headache
    E. Method overloading
26. Which of the following methods of the java io File can be used to create a new file?
    A. makeNewfile()
    B. createNewFile()
    C. newFile()
    D. There is no such method. Just do File f = new File ("filename.txt"). then the new file, named filename.txt, will be created.
27. (Choose 1 answer)
    Which of the following statements is incorrect?
    A. Values stored in TreeSet are automatically sorted
    B. Vector does not allow duplicate elements.
    C. ArrayList can duplicate elements.
    D.TreeSet does not allow duplicate elements.
28. (Choose 1 answer)
    An object is an instance of a class. True
    Answer (Choose 1 answer)
29. public class Test{
    public static void main(String[] args){

```
String s1 = “xyz";
String s2 = "xyz";
if (s1 == s2)
        System.out println("Line 4");
                if (s1.equals(s2)
        System.out.println("Line 6");
}
}
```

Line 4

Line 6

30. What is the output of the following code?

```
class A{
static int N = 10;
static String S = "Hello";
int x = 5;
static {N = 7; S = "GO";}
void print(){
 S = "TO";
  System out printin(S + N+ x);}
}
class Main {
public static void main(String args []){
  System out print(A.S);
 A t = new A();
  t.print();
  System out println();
}
}
```

GO

TO75

31. The package provides some of the most useful Java classes that are frequently needed in all types of applications. java.lang
32. Which of the following is true?

A. A class does not inherit constructors from any of its superclasses.

B. A class inherits constructors from its direct superclass only.

C. A class inherits constructors from its superclasses.

D. A class inherits constructors from its superclasses when the program points out that.

33. Given the following code fragment

```
 switch( x){
  case 100:
 System.out println("One hundred") break;
  case 200:
 System.out println(" Two hundred")break;
```

case 300:
System.out println("Three hundred");
Break;
Choose all of the declarations of x that will not cause a compiler error (Select 2).

A byte x = 100;

B long x = 400;

C. short x = 200 ;

D. int x = 300;

34. How many bytes does the following code write to file dest?

```
1. try {
2.    FileOutputStream fos = newFileOutputStream("dest");
3.    DataOutputStream dos = new DataOutputStream(fos);
4.    dos.writeInt(3);
5.    dos.writeFloat(0.0001f);
6.    dos.close();
7.    fos.close();
8. }
9. catch (IOException e) { }
```

8 (Nếu là double = 12)

35. What is the output of the following code?

1: int i = 16;

2: int j = 17;

3: System.out.println("i >> 1 = " + (i >> 1));

4: System.out.println("j >> 1 = " + (j >> 1));

i >> 1 = 8

j >> 1 = 8

36. Which of the following declarations is INCORRECT?

A. String s = "Hi";

B. int[] ar = new int(3);

C. double d = 1.3E + 21;

D. double d = 1.3D;

37. Given a string constructed by calling s = new String("xyzzy"), which of the calls modifies the string?

A s.substring(3);

B. s.replace('z', 'a');

C. s.append("aaa");

D. s.trim();

E. s.concat(s);

F. None of the others

38. Select the most correct statement

A. An interface may be declared as public, protected or private.

B. An interface may be declared as public, protected, private or abstract.

C. An interface may be declared as public or abstract.

D. An interface may be declared as public or protected.

39. Which of the following statements is correct?

A. Only primitives are converted automatically, to change the type of an object reference, you have to do a cast.
B. Arithmetic promotion of object references requires explicit casting.
C. Both primitives and object references can be both converted and cast.
D. Only object references are converted automatically: to change the type of a primitive, you have to do a cast.

40. Which of the following is true?
A. Both > and >>> operators carry the sign bit when shifting right.
B. The >>> operator carries the sign bit when shifting right. The >> zero-fills bits that have been shifted out.
C. Both >> and >>> operators zero-fill bits that have been shifted out.
D. The >> operator carries the sign bit when shifting right The >>> zero-fills bits that have been shifted out.
41. A Java source code will be compiled to Java bytecode.
42. Which of the following classes supports developers to get the pointer of a file?
java.io.FileStream

PE_03

1. What will happen when you attempt to compile and run the following code?

```
public class Inc{
public static void main(String argv[]){
     Inc inc = new Inc():
    int i=0;
     inc.fermin(i);
     System.outprintin(i++);}
  void fermin(int i){
    i++;}
 }
```

B. Output of 0

2. Given:

```
public class Bar {
  public static void main(String [] args) {
int x=5;
boolean b1 = true;
boolean b2 = false;
if(x == 4) & !b2)
 System.out.print("1 ");
         System.out.print("2 ");
if ((b2 = true) & b1)
 System.out print("3");
}
}
```

What is the result? 2 3

3. What will be printed out if you attempt to compile and run the following code?

```
int i=9;
switch (i) {
default:
System.out.println("default");
case 0:
System.out.println("zero");
break:
case 1:
System.out println("one");
case 2:
System.out println("two");
```

Chưa break là chưa dừng. in ra default và zero.

default, zero

4. When is x y an int?
   A. When neither x nor y is a float, or a double
   B. Always
   C. Whenever x and y are bytes, shorts. chars, ints, or longs.
   D. Whenever x and y are bytes, shorts, chars, or ints.
5. Which two code fragments correctly create and initialize a static array of int elements? (select 2)
   A. static final int[] a = new int[2] { 100, 200 };
   B. static final int[] a; static void init) {a = new int[3]; a[0] = 100; a[1] = 200;}
   C. static final int[] a = {100, 200};
   D. static final int[] a; static { a=new int[2]; a[0]=100; a[1]=200; }
6. Given:

```
1. public class TestString3 {
2. public static void main(String[] args) {
3. // insert code here
5. System.out.println(s):
6. }
7.}
```

   Which code fragment, inserted at line 3. generates the output 424789?
   A. StringBuffer s = new StringBuffer(“1234567897”); s.substring(3,6).delete(1,3).insert(1, “24”);
   B. StringBuilder s = new StringBuilder(“1234567897”); s.substring(3, 6).delete(1, 2).insert(1, "24”);
   C. StringBuffer s = new StringBuffer(“1234567897”); s.delete(0,3).replace(1,3,"24”);
   D. String s = "123456789"; s = (s-"123).replace(1.3.247) - "89": %3!
7. Consider the following code:

```
1. Dog rover, fido;
2. Animal anim;
3.
4. rover = new Dog();
5. anim = rover;
6. fido = (Dog)anim;
```

Where:
Mammal extends Animal
Dog extends Mammal
Which of the following statements is true?
A. The code will compile but will throw an exception at line 6.
B. The code will compile and run.
C. Line 5 will not compile.
D. The code will compile and run, but the cast in line 6 is not required and can be eliminated.
E. Line 6 will not compile.

8. You want to find out the value of the last element of an array. You write the following code. What will happen when you compile and run it?

```
public class MyAr{
public static void main(String argv[]{
  int[] i = new int[5]:
  System.out printin(i[5]):
  }
```

A. The string "null" will be output
B. The value 0 will be output
C. An error at run time
D. An error at compile time

9. What interfaces can be implemented in order to create a class that can be serialized?
A. No interfaces need to be implemented. All classes can be serialized.
B. Have the class declare that it implements java.io.Externalizable, which defines two methods: readObject and write Object
C. Have the class declare that it implements java.io.Serializable, which defines two methods: readObject and writeObject
D. Have the class declare that it implements java.io.Serializable. There are no methods in the interface.

10. What is the output of the following program?

```
class test{
public void main(String[] args){
int i;
 do{
i++;
 }while(i<0);
System.out println();}
}
```

A. Compile OK but display nothing
B. o
C. Cannot compile and display error "variable i might not have been initialized"
D. 1

11. Which of the following statements are true? (Select two)
A. Under no circumstances can a class be defined with the private modifier
B. A inner class may under some circumstances be defined with the protected modifier

C. An interface cannot be instantiated

D. Adding more classes via import statements will cause a performance overhead, only import classes you actually use.

12. The_____ method is used to replace a character in a StringBuffer, with another at a specified position.

A. replaceCharAt()

B. setStringAt()

C. replace()

D. setCharAt()

13.

```
1. public class Test{
2. public String foo(int x, int y) {
       return "AA";
4. }
5.
6. public String foo(int… vals) {
       return "BB";
8. }
9.}
```

Given:

25. Test a = new Test():

26. System.out println(a.foo(4, 5)):

What is the result?

A. Line 26 prints "BB" to System.out

B. Compilation of class A will fail due to an error in line 6.

C. An exception is thrown at line 26 at runtime.

D. Line 26 prints "AA" to System.out

14. Which of the File class description statements below is WRONG?

A. File class is a class which could be found in java.io package.

B. File class helps accessing file/dictionary information only.

C. File class has only one constructor with a file path parameter

D. File class doesn't have any method to access data in a file.

15. Which of the following is illegal statement?

A. inti=1/3;

B. double d = 999d;

C. floatf = 1.01;

D. float f = 1/3;

16. Which two of the following interfaces are at the top of the hierarchies in the Java Collections Framework? (Select two)

A. Queue

B. SortedMap

C. Collection

D. Map

E. List

F. Set

17. Given the following class

```
public class Ombersley{
public static void main(String argv[]){
  boolean b1 = true;
  if(b1 ==true) || place(true)){
     System.out printin("Hello Crowle");
  }
  public static boolean place(boolean location){
  if(location==true){
     System.out printin("Borcetshire");
   System.out printin("Powick");
  return true;
```

What will happen when you attempt to compile and run it? Output of "Hello Crowle"

18. Which of the following statement(s) is(are) true?

1)An abstract class cannot have any final methods.

2)A final class may not have any abstract methods.

A. None of them

B. Only statement 1

C. Only statement 2

D. Both statement 1 and 2

19. A variable declared with the default modifier can be accessed by_____ (Select 2)

A. the class containing that variable only

same package different classes

C. different packages and different classes

same package sub-classes

E. all classes

F. different packages and sub-classes

20. Given the following code, which of the results that follow would you expect?

```
1. package mail;
2.
3. interface Box {
4. protected void open();
5. void close();
6. public void empty();
7.}
```

A. The code will not compile because of line 6.

B. The code will not compile because of line 5.

C. The code will compile.

The code will not compile because of line 4.

21. What will happen when you attempt to compile and run the following code?

```
public class Agg{
static public long i=10;
public static void main(String argv[]){
```

Vì switch case ko thể dùng long mà phải dùng int hoặc biến thể của int

```
switch(i){
  default:
        System.out printin("no value given");
        case 1:
        System.out printin("one");
        case 10:
        System.out printin("ten");
        case 5:
        System.out printin("five");
    }
    }
    }
```

Compile time error

22. Given:
    10. public class ClassA {
    11. public void count(int i) {
    12. count(++i);
    13. }
    14.}
    And:
    20. ClassA a - new ClassA();
    21. a.count(3);
    Which exception or error should be thrown by the virtual machine? StackOverflowError
23. Your programming problem is to create a list of unique values of part ID numbers in a large collection of data representing orders. Furthermore, it would be nice if the list was in sorted order.
    You have decided to use one of the collection classes in the java.util package to construct this list. Which of the following interfaces should the ideal class implement? SortedSet
24. Which of the following statements regarding the 'final' modifier are true? (Select3)
    A method declared final cannot be overridden in the subclass
    A variable defined as 'final' is a constant
    A class declared as being final can be subclassed
25. Suppose a source file contains a large number of import statements and one class definition. How do the imports affect the time required to load the class?
    A. Class loading takes slightly less time.
    B. Class loading takes slightly more time.
    C. Class loading takes no additional time.
    D. Class loading takes significantly more time.
26. Given the following code, what will be the outcome?
    10. public class Funcs extends java.lang.Math {
    11. public int add(int x, int y) {
    12. return x + y;
    13. }
    14. public int sub(int x, int y) {

15. return x- y;
16. }

class java.lang.Math là final, k thể extends

17. public static void main(String [] a) {
18. Funcs f = new Funcs();
19. System.outprintin("" + f.add(1, 2) + ""+f.sub(3.4));
20. }
21. }

B. The line 10 causes compile-time error.

What will happen when you attempt to compile and run the following code?

```
class Base{
 public void Base({
System.out printin("Base");
}
public class In extends Base{
 public static void main(String argv[]){
In i-new In();
```

A. Compilation and no output at runtime

27. The java.util.Vector class provides storage for object references in the order of addition and automatically expands as needed. Which of the following classes is closest in function to the Vector class? java.util ArrayList
28. Given:

```
10. interface Foo{ int bar(); }
11. public class Sprite {
12. public int fubar(Foo foo) { return foo.bar); }
13. public void testFoo() {
14. fubar(
15.     // insert code here
16. );
17.}
18.}
```

Which code, inserted at line 15, allows the class Sprite to compile?

new Foo0 { public int bar(){return 1;}}

29. Which of the following is true about garbage collection?

A. If you want the program to collect garbage immediately, you should run the System.gc() method.

B. You can force garbage collection of an object by setting all references to the object to new values (null, for example).

C. Garbage collection guarantees that a program will not run out of memory.

D. Garbage collection does not guarantee that a program will not run out of memory.

30.

(1) A value variable contains data's value.

(2) A reference variable contains the address of data.

The statement (1) is___ and the statement (2) is___. True, true

31. Suppose the declared type of x is a class, and the declared type of y is an interface. When is the assignment x = y: legal? When the type of x is Object
32. _____allows an operation to have different behavior on different objects. Polymorphism
33. What will happen when you compile and run the following code?

```
public class Scope{
 private int i;
 public static void main(String argv[]){
Scope s = new Scope();
s.amethod();
 }//End of main
 public static void amethod(){
System.out printin(i);
 }//end of amethod
}//End of class
```

A. Nothing will be printed out
B. A compile time error complaining of the scope of the variable i
C. A compile time error
D. A value of 0 will be printed out

34. State True or False:
If class Y extends class X, the two classes are in different packages, and class X has a protected method called fun(). then any instance of Y may call the fun() method of any other instance of Y.
False
35. Which of the following may appear on the right-hand side of an instance of operator? (select two)
A. A reference
An interface
C. A variable of primitive type
A class
E. The name of a primitive type
36. Which statement is true about this code?

```
class A{
private static int x = 100;
public static void main(String args[]){
A t = new A();
    t.x++;
    A h= new A();
     h.x++;
     h = new A();
     h.x++;
     A.x++;
    System.out.println("x =" + x);}
```

} The program compiles and the output is x = 104.
37. Which of the following is true?

A. The readLine() method of the RandomAccessFile class returns false when it has reached the end of a file.
B. The readLine() method of the RandomAccessFile class returns empty string (") when it has reached the end of a file.
C. The readLine() method of the RandomAccessFile class returns true when it has reached the end of a file.
D. The readLine() method of the RandomAccessFile class returns null when it has reached the end of a file.

38. You are writing a set of classes related to cooking and have created your own exception hierarchy derived from java.lang.Exception as follows:
Exception
+-- BadTasteException
+-- BitterException
+-- SourException
BadTasteException is defined as an abstract class.
You have a method eatMe that may throw a BitterException or a SourException. Which of the following method declarations will be acceptable to the compiler?
A. public void eatMe(Ingredient[] list) throws BitterException, SourException
39. All the methods of the_____class are static. A. Math
40. Which of the statements below is true?
A. UTF characters are all 16 bits.
B. Bytecode characters are all 16 bits.
C. Unicode characters are all 16 bits.
D. UTF characters are all 24 bits.
E. UTF characters are all 8 bits.
41. What will be output if you try to compile and run the following code, but there is no file called Hello.txt in the current directory?.

```
import java.io.*;
public class Mine{
 public static void main(String argv[]){
Mine m=new Mine();
System.out.println(m.amethod());
 public int amethod(){
try {
 FileInputStream dis=new FileInputStream("Hello.txt");
}catch (FileNotFoundException fne) {
 System.out.println("No such file found");
 return -1;
}catch(IOException ioe) {
} finally{
 System.outprintlin("Doing finally");
return 0;}
}
```

} No such file found, Doing finally. -1

42.

```
1. public class C {
2. public void method30 {
3. //more code here
4. }
5.}
25. try {
26. A a=new A();
27. a.method10;
28. }catch (Exception e) {
29. System.out.print(“an error occurred"):
30. }
```

Which is true if a NullPointerException is thrown on line 3 of class C?

A. The application will crash.

B. The code on line 5 of class B will execute.

C. The code on line 5 of class A will execute.

The code on line 29 will be executed.

PE_04

1. Select the correct statement

   A. An object reference can always be cast to an interface reference.

   An object reference can be cast to an interface reference when the object implements all methods of the referenced interface.

   C. An object reference can be cast to an interface reference when the object implements the referenced interface.

   D. An object reference cannot be cast to an interface reference.

2. What would happen when the following code is compiled and executed?

```
public class Compare {
public static void main(String args) {
int x =  10, y;
 if(x < 10)
  y = 1;
 if(x >= 10) y = 2;
System.out printin("y is "+ y);
 }
```

   A. The program compiles and prints y is 2 when executed

   B. Depends on the particular implementation of the Java Virtual Machine

   C. The program compiles and prints y is 1 when executed.

   D. The program throws a runtime exception.

   E. The program compiles and prints y is 0 when executed.

   The program does not compile complaining about y not being initialized.

3. _____class reads bytes from a file.

FileInputStream
B. FileOutputStream
C. InputStream
D. FileInput

4. int values[] = {1.2.3.4,5,6.7.8):
   for(int i=0;i< X; ++i)
   System.outprintin(values[i]):
   Referring to the above, what (smallest) value for X will print all members of array "values"?
   A. 8
   B. 9
   C. None, since there is a syntax error in the array declaration
   D. 7
   E. 1
5. What does the following line of code mean?
   double table[];
   A. table is a variable that refers to two numbers
   B. table is a variable to refers to a real number
   C. It is not legal Java code
   D. table is a variable that refers to an array
6. Which of the following methods of the Collections class can be used to find the largest value in a Vector?
   A. Collections.maxElement()
   B. We don't need any method because elements in Vector are automatically sorted. Therefore, the first element contains the maximum value.
   C. Collections.max()
   D. Collections.maxValue()
7. Given the following code, what test would you need to put in place of the comment line?
   //place test here
   to result in an output of the string: Equal
   public class EqTest{
   public static void main(String argv[]){
   EqTest e=new EqTest():
   }
   EqTest(){
   String s="Java";
   String s2="java";
   //place test here {
   System.out printin("Equal");
   }else{
   System.out printin("Not equal");}
   }
   if(s.equalslgnoreCase(s2))
8. What would be the output from this code fragment?
   1. intx= 0. y = 4, z = 5;

2. if (x > 2) {
3. if (y < 5) {
System.out printin("message one");
5. }
6. else {
System.out printin("message two");
8. }
9.}
10. else if (z > 5) {
11. System.outprintin("message three");
12.}
13. else {
14. System.out.printin("message four");
15.}

A. message four
B. message two
C. message one

9. Whenever a method does not want to handle exceptions using the try block, the ___is used.

A. throws
B. throwable
C. throw
D. nothrows

10. What is the output when the following program is run?

```
public class Main{
public static void main(String args[]){
Decrementer t= new Decrementer();
 double x = 7.2;
  System.out print(x+" ");
 t.decre(x);
  System.out.print(x +" ");
 t.decre(x);
 System.out.println(x);
 }
}
class Decrementer{
public void decre(double x){x = x-2;}
```

} 7.2, 7.2, 7.2

11. Which of these statements about the value that appears in a switch statement are correct? (select 2)

A. The value can be of type char.
B. The value can be of type boolean.
C. The value can be of type long.
D. The value can be of type byte.

12. Given:

11. public static void foo(String str) {
12 try {
13. float x= Float.parseFloat(str);
14. } catch (NumberFormatException e) {
15. x = 0;
16. } finally {
17. System.out.println(x);
18. }
19.}
20. public static void main(String[] args) {
21. foo("invalid"):
22.}

What is the result?

A. 0.0

B. A NumberFormatException is thrown by the foo method at runtime.

C. AParseException is thrown by the foo method at runtime.

D. Compilation fails at line 15 with message about variable x not found.

13. Classes that are intended to be used outside the package within other programs must be declared _____

A. static

B. public

C. default

D. private

14. The following lists the complete contents of the file named Derived.java:

1. public class Base extends Object {
2. String objType:
3. public Base({objType =
"I am a Base type";
4. }
5.}
6.
7. public class Derived extends Base {
8. public Derived0 { objType =
"I am a Derived type";
9. }
10. public static void main(String args[]){
11.Derived D = new Derived();
12. }
13.}

What will happen when this file is compiled?

A. The compiler will object to line 7.

B. Two class files. Base.class and Derived.class, will be created.

15. After the following code fragment, what is the value in a?

String s;

int a;
s = "Foolish boy.";
a = s.indexOf("fool");
A. random value
B. 4
C. O
D. -1
(Choose 1 answer)
10. interface Foo {
11. int bar();
12.}
13.
14. public class Beta {
15.
16. class A implements Foo {
17. public int bar() { return 1;}
18. }
19.
20. public int fubar(Foo foo) { return foo.bar); }
21.
22. public void testFoo(){
23.
24. class A implements Foo {
25. public int bar() { return 2;}
26.
27.
28. System.out.println(fubar(new A());
29.
30.
31. public static void main(String[] args) {
32. new Beta().testFoo();
33. }
34.}
Which statement is true?
A. If lines 24, 25 and 26 were removed, compilation would fail.
B. The code compiles and the output is 2.
C. The code compiles and the output is 1.
D. If lines 16, 17 and 18 were removed, compilation would fail.

16. Which of the following statements is true?
A Object references can be converted in both method calls and assignments, and the rules governing these conversions are identical.
B. Object references can be converted in both method calls and assignments, but the rules governing these conversions are very different
C. Object references can be converted in assignments but not in method calls.

D. Object references can be converted in method calls but not in assignments.
E. Object references can never be converted.

17. All of the numeric wrapper classes in the java.lang package are subclasses of the abstract class
    A. java.lang.Object
    B. java.lang.Integer
    C. java.lang.Wrapper
    D. java.lang.Number
18. What will happen when you attempt to compile and run the following code
    class Base{
    protected int i = 99;
    public class Ab{
    private int i=1;
    public static void main(String argv[]){
    Ab a = new Ab();
    a.hallow();}
     abstract void hallow(){
      System.out.println("Claines "+ i);}
    A. Compilation and not output at runtime
    B. Compilation and output of Claines 99
    C. Compilation and output of Claines 1
    D. Compile time error
19. How can you change the current working directory using an instance of the File class called FileName?
    A. FileName.cd("DirName")
    B. The File class does not support directly changing the current directory.
    C. FileName.chdir("DirName")
    D. FileName.cwd("DirName")
20. Is the following interface valid?
    public interface Testinterface {
     void aMethod(intaValue) {
    System.out.println("Hi Mom”);
    }
    B. False
21. Which of the following statements are true? (select two)
    A. There are NO circumstances where an inner class may be defined as private
    B. An inner class may be defined as static
    C. An inner class may extend another class
    D. A programmer may only provide one constructor for an anonymous class
22. Choose the valid identifiers from those listed here. (select 2).
    A. $int
    B. byte
    C. BigOILongStringWithMeaninglessName
    D. 1$2
    E. finally

23. If you wanted to find out where the position of the letter v (ie return 2) in the string s containing "Java". which of the following could you use?
    A. indexOf(s. v);
    B. s.indexOf('v');
    C. mid(2,s);
    D. charAt(2);
24. Which of the following statements is true?
    A. A final class may not contain non-final data fields.
    B. A final class may only contain final methods.
    C. A final class cannot be extended.
    D. A final class must be instantiated.
25. Given the following
    List<String> names = new ArrayList<String>0:
    which of the following are legal? (Selectwo)
    A. Iterator<String> iter = names.iterator();
    B. while (String s:names)
    C. for (String s:names)
26. Which of the following methods can be legally inserted in place of the comment //Method Here ? (select two)
    class Base{
    public void amethod(int i) { }
    public class Scope extends Base{
    public static void main(String[] argv){}
    //Method Here
    A. void amethod(long i) throws Exception {}
    B. public void amethod(int i) throws Exception {}
    C. void amethod(int i) throws Exception {}
    D. void amethod(long i){}
27. You want to loop through an array and stop when you come to the last element. Being a good java programmer and forgetting everything you ever knew about C/C++ you know that arrays contain information
    A. myarray.length;
    B. myarray.length();
    C. myarray.size();
    D. myarray.size;
28. Which of the following statements are true with package? (select 2)
    A. In Java, a package is a combination of classes, interfaces and sub-packages
    B. A package in Java can be created by including a package statement as the first statement in a Java program
    C .The classes in a package must not be saved under a folder that bears the same name as the package
29. Given:
    11. public interface Status {
    12./* insert code here */ int MY_VALUE = 10;

13.}

Which three are valid on line 12? (Select three)

A. native

B. abstract

static

final

public

F. protected

30. If your method overides one of its superclass's methods, you can invoke the overridden method through the use of the keyword parent. False

31. Consider the following application:

```
1. class Q6 {
2. public static void main(String args[]) {
3. Holder h = new Holder();
    h.held = 100;
    h.bump(h);
    System.out.println(h.held);
7. }
8.}
9.
10. class Holder {
11. public int held;
12. public void bump(Holder theHolder) {
13. theHolder.held++;
   }
15. }
15. }
```

What value is printed out at line 6? 101

32. Select a correct statement

A void f(double d., int. x, int y) {}

B. void f(int. x, int. y) {}

C. void f(int. x, int y) {}

void f(intx, int. y){}

33. Which of the following is INCORRECT?

char c \u1234:

B. char c = 0x1234;

C. String x= "ABC" + 2:

D. char c = lu1234':

34. Suppose the current directory does not contain a sub-directory named "dir

What happens when you try to compile and run the following application?

```
10. import java.io.*;
11. public class Main {
12. public static void main(String argv[]){
13. try {
```

```
File d = new File("dir");
 File f = new File(d."f.bxt");
 if( !f.exists() ) {
  f.createNewFile();
}catch (IOException e) {
 e.printStackTrace();
22. }
23.}
```

A. Line 17 is never executed.

B. Line 15 creates a directory named "dir" and a file "fi.txt" within it.

C. Line 17 creates a directory named dir and a file "fi.bxt" within it

35. If you need a Set implementation that provides value-ordered iteration, which class should you use?

TreeSet

B. HashSet

C. LinkedHashSet

36. Consider the following class definition:

```
1. public class Test extends Base {
   public Test(int j) {
3. }
   public Test(int j, int k) {
          super(j, k);
6. }
7.}
```

Which of the following forms of constructor must exist explicitly in the definition of the Base class? Assume Test and Base are in the same package. (Select two)

A. Base(int j) { }

Base() { }

Base(int j, int k) { }

D. Base(int j, int k, int l) { }

37. Consider the following class:

```
1. class Test{
2. void foo(int i){
3. System.out printin("int version");
4. }
5. void foo(String s) {
    System.outprintin("String version");
7. }
9. public static void main(String[] args) {
     Test t= new Test();
     char ch = 'p';
     t.foo(ch);
13. }
14.}
```

Which of the following statements is true?
A. Line 12 will not compile, because no version of foo() takes a char argument.
B. Line 5 will not compile, because void methods cannot be overridden.
The code will compile and produce the following output int version.

38. When a negative long is cast to a byte. what is the possible value of the result? (Select the most correct answer).
The value may be negative, zero or positive.
B. Positive
C. Negative
D. Zero

39.
```
class A{
String name; int age;
A(String na, int age) {name=na;age=age;}
public class Main{
public static void main(String argv[]){
 try {
  File f= new File("xxx.ser");
   FileOutputStream fos = new FileOutputStream();
   ObjectOutputStream oos = new ObjectOutputStream(fos);
   oos.write Object(new A("HOA",22); //(1)
   oos.close(); //(2)
   fos.close();
   }
  catch (Exception x){}
}
```
A. Compiler error at line (1).
B. An exception is thrown at line (2).
An exception is thrown at line (1).
D. No compiler error and no exception.

PE_04

1. Given the following declarations
String s1=new String("Hello");
String s2-new String("there");
String s3-new String);
Which of the following is legal operation?
A. s3=s1 & s2:
B. s3=s1 + s2;
C. s3=s1-s2:
D. s3-s1 && s2
2. Is this code snippet incorrect?
List<String>myIntList = new Linked List<String>();

myIntList.add(0);

A. TRUE

B. FALSE

3. A generic class can have only one type parameter

A. FALSE

B. TRUE

4. Which of the following classes implement java.util. List? (Select two)

A. java.util. LinkedList

B. java.util. HashMap

C. java.util. TreeSet

D. java.util. ArrayList

5. The ability to define a class or object as an extension of another class or object is

A. Polymorphism

B. Overriding

C. Abstraction

D. Inheritance

E. Encapsulation

F. Overloading

6. Given the following class definition

```
public class Droitwich{
   class one{
      private class two{
          public void main({
         System.out.printin("two");
   }
```

Which of the following statements is true?

A. The code will not compile because class two is marked as private

B. The code will compile without error

C. The code will compile and output the string two at runtime

D. The code will not compile because the classes are nested to more than one level

7. Which of the following statements is INCORRECT?

A. A method in an interface can access class level variables

B. All of the methods in an interface are implicitly abstract

C. All of the variables in an interface are implicitly static

D. All of the variables in an interface are implicitly final

8. Given the following class definition, which of the following methods could be legally placed after the comment Here ? (Select two)

```
public class Rid{
   public void amethod(int i. String s){}
   //Here
```

A. public void amethod(String s, int i){}

B. public int amethod(int i, String s){}

C. public void amethod(int i, String mystring){}

D. public void Amethod(int i, String s) {}

9. Which of the following operations might throw an ArithmeticException?
   A. -
   B. *
   C. +
   D. %
   What happens when you try to compile and run this application?
   1. import java.util.*;
   3. public class Apple {
   4. public static void main(String[] a) {
      Set<Apple> set = new TreeSet<Apple>();
      set.add(new Apple());
      set.add(new Apple());
      set. add(new Apple());
   9. }
   10.}
   A. An exception is thrown at line 6 (Apple cannot be cast to java.lang. Comparable).
   B. No exception is thrown.
   C. An exception is thrown at line 8 (Apple cannot be cast to java.lang.Comparable).
   D. An exception is thrown at line 7 (Apple cannot be cast to java.lang.Comparable).
   E. Compiler error.
10. Which one statement is true about the following code fragment?
   1. import java.lang.Math;
   2. Math myMath = new Math();
   3. System.out.printin("cosine of 0.123 = " + myMath.cos(0.123));
   A. Compilation succeeds, although the import on line 1 is not necessary. During execution, an exception is thrown at line 3
   B. Compilation succeeds. The import on line 1 is necessary. During execution, an exception is thrown at line 3
   C. Compilation succeeds and no exception is thrown during execution.
   D. Compilation fails at line 3
   E. Compilation fails at line 2.
11. Which of the following is true?
   A. The Java Collection Framework is a set of packages that support operations on collections of objects.
   B. The Java Collection Framework is a set of classes that support operations on collections of objects.
   C. The Java Collection Framework is a set of interfaces that support operations on collections of objects.
   D. The Java Collection Framework is a set of classes and interfaces that support operations on collections of objects.
12. Choose two advantages of generics
   A. error detection at compile time
   B. error detection at runtime
   C. late binding

D. reduce casting

13. The process of bringing an object into existence is called construction
    A. True
    B. False
14. Select INCORRECT statement about serialization.
    A. To serialize an object, first create an instance of java.io.ObjectOutputStream.
    B. The process of writing an object is called serialization.
    C. When an Object Output Stream serializes an object that contains references to another object, every referenced object is not serialized along with the original object.
    D. When an object is serialized, it will probably be deserialized by a different JVM.
15. In which stream, data unit is primitive data type or string?
    A. Object stream
    B. Binary low-level stream
    C. Binary high-level stream
    D. Character stream
16. Is the following interface valid?
    public interface Newinterface{}
    A. YES
    B. NO
17. Suppose a source file contains a large number of import statements. How do the imports affect the time required to compile the source file?
    A. Compilation takes significantly more time.
    B. Compilation takes slightly less time.
    C. Compilation takes no additional time.
    D. Compilation takes slightly more time.
18. Which of these stream contains the classes which can work on character stream?
    A. Byte Stream
    B. InputStream
    C. Character Stream
    D. OutputStream
19. Given the following class definition, which of the following statements would be legal after the comment //Here (Select two)

```
class InOut{
String s= new String("Between");
   public void amethod(final int iArgs){
  int iam;
     class Bicycle{
        public void sayHello(){
        //Here
      }//End of bicycle class
   }//End of amethod
  public void another{
  int iOther;
  }
```

}

A. System.out.println(iOther);

B. System.out.printiln(s);

C. System.out.printIn(iArgs);

D. System.out.println(iam);

20. Which of the following is true?

A. The Iterator interface is used to step through the elements of a Collection.

B. The Iterator interface is used to step through the elements of a Vector and an ArrayList only.

C. The Iterator interface cannot be used to step through the elements of a Map.

D. Without the Iterator interface, you cannot display the elements of a Collection.

21. Which of the following is true about Wrapped classes?

A. Wrapper classes are: Boolean, Character. Byte, Integer. Long. Float, and Double.

B. Wrapper classes are: Boolean, Char, Byte, Short, Integer. Long. Float, and Double.

C. Wrapped classes are classes that allow primitive types to be accessed as objects.

22. Which of the following statements is INCORRECT?

A. If a class has any abstract methods it must be declared abstract itself.

B. All methods in an abstract class must be declared as abstract

C. When applied to a class, the final modifier means it cannot be sub-classed

D. None of others

Which of the following may appear on the left-hand side of an instanceof operator?

A. A variable of primitive type

B. A class

C. An interface

D. A reference